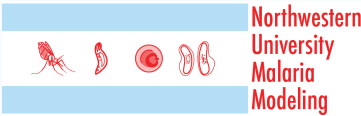


# SEBASTIAN RODRIGUEZ

Fifth year PhD student in the department of statistics at Northwestern University with over four years of research experience in statistical modeling involving time-series analysis, epidemiology, optimization, and machine learning. I have presented my work bridging the knowledge from statistical modeling and epidemiology and published multiple scientific papers with interdisciplinary focuses in statistical modeling and computer science. My current focus is in applying spatio-temporal models to analyze long-term trends in malaria incidence and quantify the efficacy of malaria interventions in sub-Saharan Africa.



## CONTACT

✉ [sebastian@rodriguez.cr](mailto:sebastian@rodriguez.cr)  
🐙 [github.com/srodriguez0](https://github.com/srodriguez0)  
🌐 [linkedin.com/in/sebastian-rodriguez-509528aa](https://www.linkedin.com/in/sebastian-rodriguez-509528aa)  
📞 +1 (814) 441 2781

## LANGUAGE SKILLS


R	
Python	
MATLAB	
C/C++	
LaTeX	

## EDUCATION

- present  
|  
2017
- PhD, Statistics**  
Department of Statistics  
Northwestern University  
• Dissertation: Spatio-temporal modeling to quantify the efficacy of malaria interventions in Burkina Faso  
• Recipient of the Northwestern University Minority Health and Health Disparities Research Training Program (NU-MHRT) training grant.
- 2017  
|  
2012
- Bachelors of Science, Computer Science & Engineering; Applied Mathematics (Computational Statistics emphasis)**  
School of Engineering; Department of Applied Mathematics  
University of California, Merced  
• Resarch under Harish Bhat in the department of mathematics and Alberto Cerpa in the department of EECS at the University of California, Merced.  
• Recipient of the Outstanding Undergraduate Student Award in Natural Sciences (2017).  
• Undergraduate Representative of the UC Merced SIAM chapter




## SELECTED POSITIONS







- present  
|  
2020
- T37 Northwestern University Minority Health and Health Disparities Research Training Program (NU-MHRT) pre-doctoral fellow**  
Statistics Department; Malaria Modeling Research Group (Gerardin's Lab)  
Northwestern University  
• Applied statistical modeling to health facility routine case data from Burkina Faso to quantify changing trends in malaria incidence in the presence of changing health care policies.  
• Collaborated with in country partners and partners at the WHO Global Malaria Programme to parse and manipulate this messy dataset to gain insights on the effectiveness of newly introduced preventative interventions.  
• Presented our work to researchers from diverse backgrounds in several global health and epidemiological conferences and symposia including ASTMH in 2020 and are currently preparing 2 manuscripts.
- 2017  
|  
2014
- Undergraduate research assistant**  
Department of Applied Mathematics (Harish Bhat)  
University of California, Merced  
• Applied statistical analysis tools in R, Python, and Spark to fit high-dimensional, non-linear models (Random Forests, SVMs) to large datasets, handling big data problems by integrating mongoDB and Hadoop to map and reduce our data.  
• Modeled basketball data by inferring stochastic continuous-time Markov chains from the data and presented our work at multiple statistical and machine learning conferences.  
• Expanded on research by exploring semi-Markov models and using optimization to develop subproblems to improve our model fit.

- 2016 ● **California Alliance for Minority Participation (CAMP) research fellow**  
Department of Applied Mathematics (Harish Bhat)  University of California, Merced
- Expanded our research on predicting NBA games with machine learning and stochastic modeling techniques.
  - Created a talk and poster presentation for Joint Statistical Meetings (JSM) 2016.
  - Helped lead discussions on expanding access to research and graduate programs for underrepresented minorities in California.
- 2015 ● **Sales Planning Analysis Intern**  
PlayStation (Sony Computer Entertainment America)  San Mateo, CA
- Conducted analysis on in house products to ascertain possible retailer specific marketing strategies using Apache Hadoop and Hive to query and aggregate massive datasets.
  - Presented business insights on emergent products to company CEOs and VPs of sales and marketing.
  - Processed massive datasets to leverage business insights with Excel and a small amount of Tableau.
- 2014 ● **Software Development Team Intern**  
Zeptoo  San Jose, Costa Rica; Berkeley, CA
- Worked with a team of software engineers to develop the Airbanq Android application for alpha testing.
  - Conducted alpha tests in Fruitvale, Oakland, where we worked through a community cash checking store and borrowed their expertise and clientele to conduct our field tests.
  - Worked closely with the product owner, the investing partners, and the lead software architect to coordinate and plan the alpha tests, as well as to interpret and communicate the test findings to the development team.
- 2013 ● **Interning Software Developer**  
TecApro  San Jose, Costa Rica
- Created an Android application to keep tracks of changes to building blueprints.
  - Helped the company break into the mobile application industry by helping them prototype their first application.
  - Worked independently on this project, receiving support from the team of software engineers at TecApro.



## SELECTED TALKS & PUBLICATIONS

- 2021 ● **Analyzing trends in routine case data in Burkina Faso to quantify the protective effectiveness of seasonal malaria chemoprevention**  
ICSTA 2021  Northwestern University
- Invited speaker presentation
- 2020 ● **Quantifying the protective efficacy of seasonal malaria chemoprevention under programmatic implementation in Burkina Faso using routine case data**  
ASTMH 2020  Northwestern University
- Poster presentation of ongoing project conducted at the Gerardin malaria lab at Northwestern University under the supervision of my advisors Dr. Noelle Samia and Dr. Jaline Gerardin.
- 2020 ● **Quantifying the protective efficacy of seasonal malaria chemoprevention under programmatic implementation in Burkina Faso using routine case data**  
Global Health Day 2020  Northwestern University
- Poster presentation of ongoing project conducted at the Gerardin malaria lab at Northwestern University under the supervision of my advisors Dr. Noelle Samia and Dr. Jaline Gerardin.

- 2019 ● **Analyzing the Spatial Variability in Protective Efficacy of SMC in Burkina Faso under Programmatic Implementation**  
Global Health Day 2019  Northwestern University
- Poster presentation of project conducted at the Gerardin malaria lab at Northwestern University under the supervision of my advisors Dr. Noelle Samia and Dr. Jaline Gerardin.
- 2019 ● **Driving Markov Chains to Desired Equilibria via Linear Programming**  
Asilomar Conference on Signals, Systems & Computers 2019  University of California, Merced
- Authored with Harish Bhat and Li-Hsuan Huang.
  - Work presented by Dr. Bhat at Alismomar conference.
  - Paper published into the conference precedings.
- 2016 ● **Using Play-by-Play Data to Model, Simulate, and Predict NBA Games**  
MMDS 2016  University of California, Merced
- Presented a poster at MMDS 2016 on work conducted under Dr. Harish Bhat at the University of California, Merced.
- 2016 ● **Using Play-by-Play Data to Model, Simulate, and Predict NBA Games**  
JSM 2016  University of California, Merced
- Presented orally and with poster at JSM 2016 on work conducted under Dr. Harish Bhat at the University of California, Merced.
- 2015 ● **Learning Stochastic Models for Basketball Substitutions using Play-by-Play Data**  
ECML PKDD 2015 - European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases  University of California, Merced
- Work conducted as undergraduate research under Dr. Harish Bhat at the University of California, Merced.
  - Poster presented by Dr. Bhat.
  - Paper published into the conference precedings.
- 2015 ● **Citation Prediction Using Diverse Features**  
ICDM 2015 workshop  University of California, Merced
- Work conducted as undergraduate research under Harish Bhat at the University of California, Merced.
  - Authored with Dr. Harish Bhat, Dr. Li-Hsuan Huang, Dr. Rick Dale, and Dr. Evan Heit.
  - Work presented by Dr. Heit at International Conference on Data Mining Workshop (ICDMW) 2015.